CLAIMS

1-16 (cancelled without prejudice to reinstate the same at a later time, i.e., without disclaimer). 17. (original) A method of controlling a forced-air heater system having at least one heating element disposed within an air duct carrying forced air from an upstream position to a downstream position, said at least one electric heating element supplied with electrical power via a power control switch, the method comprising:

sensing an upstream temperature and a downstream temperature in the air duct at respective upstream and downstream positions relative to said at least one electric heating element such that said upstream and downstream temperatures are effected by radiant heat directly developed by said at least one heating element;

determining an air velocity through said air duct;

determining the amount kilowatts (KW) or other heat per unit time or power based upon said velocity and said upstream and downstream temperatures; and

enabling said power control switch to supply said electrical power when said kilowatts (KW) or other heat per unit time or power is less than a predetermined value.

18. (original) A method as claimed in claim 17 wherein said predetermined value is the maximum designed kilowatts (KW) or other heat per unit time or power for said air duct.

19. (original) A method as claimed in claim 17 including determining a respective radiant heat temperature factor for said upstream and downstream temperatures, based upon said electrical power supplied to said at least one heating element and the distance of the respective upstream and downstream positions, and adjusting said upstream and downstream temperatures with said

2

respective radiant heat temperature factor prior to determining the amount of kilowatts (KW) or other heat per unit time or power.

20.   (original) A method as claimed in claim 17 wherein said upstream and downstream positions are equidistant from said at least one heating element.

21.   (original) A method as claimed in claim 17 wherein determining said air velocity includes obtaining a thermal anemometric measurement of airflow in said duct.

22.   (original) A method as claimed in claim 21 including compensating said thermal anemometric measurement by sensing an ambient temperature in said air duct proximal said thermal anemometric measurement.

23.   (original) A method as claimed in claim 17 wherein determining air velocity includes sensing a differential pressure in said air duct, said differential pressure base upon a total pressure and a static pressure.

24.   (original) A method as claimed in claim 23 said total pressure and said static pressure is sensed either in said air duct or in a sub-system of said air duct subject to the same pressures as said air duct.

25.   (original) A method of controlling a forced-air heater system having at least one heating element disposed within an air duct carrying forced air from an upstream position to a downstream position, said at least one electric heating element supplied with electrical power via a power control switch, the method comprising:

sensing an upstream temperature in the air duct at said upstream position relative to said at least one electric heating element such that said upstream temperature is effected by radiant heat

directly developed by said at least one heating element, providing a downstream temperature having a predetermined, pre-set value;

determining an air velocity through said air duct;

determining the amount kilowatts (KW) or other heat per unit time or power based upon said velocity and said upstream and downstream temperatures; and

enabling said power control switch to supply said electrical power when said kilowatts (KW) or other heat per unit time or power is less than a predetermined power value.

26. (original) A method as claimed in claim 25 including determining a radiant heat temperature factor for said upstream temperature, based upon said electrical power supplied to said at least one heating element and the distance of the upstream position, and adjusting said upstream temperature with said radiant heat temperature factor prior to determining the amount of kilowatts (KW) or other heat per unit time or power.

27. (original) A method as claimed in claim 25 wherein determining said air velocity includes obtaining a thermal anemometric measurement of airflow in said duct.

28. (original) A method as claimed in claim 27 including compensating said thermal anemometric measurement by sensing an ambient temperature in said air duct proximal said thermal anemometric measurement.

29. (original) A method as claimed in claim 25 wherein determining air velocity includes sensing a differential pressure in said air duct, said differential pressure base upon a total pressure and a static pressure.

4

30. (original) A method as claimed in claim 29 said total pressure and said static pressure is sensed either in said air duct or in a sub-system of said air duct subject to the same pressures as said air duct.

31. (original) A method of controlling a forced-air heater system having at least one heating element disposed within an air duct carrying forced air, said at least one electric heating element supplied with electrical power via a power control switch, the method comprising:

sensing temperatures in said air duct on either side of said at least one electric heating element and determining an upstream temperature and a downstream temperature which temperatures are directly effected by radiant heat developed by said at least one heating element;

determining an air velocity through said air duct;

determining the amount kilowatts (KW) or other heat per unit time or power based upon said velocity and said upstream and downstream temperatures; and

enabling said power control switch to supply said electrical power when said kilowatts (KW) or other heat per unit time or power is less than a predetermined value.

32. (original) A method as claimed in claim 31 including determining a respective radiant heat temperature factor for said upstream and downstream temperatures, based upon said electrical power supplied to said at least one heating element and the distance of the respective upstream and downstream positions, and adjusting said upstream and downstream temperatures with said respective radiant heat temperature factor prior to determining the amount of kilowatts (KW) or other heat per unit time or power.

33.   (original) A method as claimed in claim 31 wherein said upstream and downstream positions are equidistant from said at least one heating element, and said predetermined value is the maximum design value for said air duct.

34.   (original) A method as claimed in claim 31 wherein determining said air velocity includes obtaining a thermal anemometric measurement of airflow in said duct.

35.   (original) A method as claimed in claim 34 including compensating said thermal anemometric measurement by sensing an ambient temperature in said air duct proximal said thermal anemometric measurement.

36.   (original) A method as claimed in claim 31 wherein determining air velocity includes sensing a differential pressure in said air duct, said differential pressure base upon a total pressure and a static pressure.

37.   (original) A method as claimed in claim 36 said total pressure and said static pressure is sensed either in said air duct or in a sub-system of said air duct subject to the same pressures as said air duct.

38.   (original) A method of controlling a forced-air heater system having at least one heating element disposed within an air duct carrying forced air, said at least one electric heating element supplied with electrical power via a power control switch, the method comprising:

sensing temperatures in said air duct on either side of said at least one electric heating element and determining an upstream temperature which is directly effected by radiant heat developed by said at least one heating element, providing a downstream temperature having a predetermined, pre-set value;

determining an air velocity through said air duct;

determining the amount kilowatts (KW) or other heat per unit time or power based upon said velocity and said upstream and said pre-set downstream temperature value; and

enabling said power control switch to supply said electrical power when said kilowatts (KW) or other heat per unit time or power is less than a predetermined power value.

39.   (original) A method as claimed in claim 38 including determining a radiant heat temperature factor for said upstream temperature, based upon said electrical power supplied to said at least one heating element and the distance of the upstream position, and adjusting said upstream temperature with said radiant heat temperature factor prior to determining the amount of kilowatts (KW) or other heat per unit time or power, said predetermined power value is a maximum design value.

40.   (original) A method as claimed in claim 38 wherein determining said air velocity includes obtaining a thermal anemometric measurement of airflow in said duct.

41.   (original) A method as claimed in claim 40 including compensating said thermal anemometric measurement by sensing an ambient temperature in said air duct proximal said thermal anemometric measurement.

42.   (original) A method as claimed in claim 38 wherein determining air velocity includes sensing a differential pressure in said air duct, said differential pressure base upon a total pressure and a static pressure.

43.   (original) A method as claimed in claim 42 said total pressure and said static pressure is sensed either in said air duct or in a sub-system of said air duct subject to the same pressures as said air duct.

44.   (original) A method of controlling a forced-air heater system having at least one heating element disposed within an air duct carrying forced air from an upstream position to a downstream position, said at least one electric heating element supplied with electrical power via a power control switch, said air duct having a predetermined set point temperature, the method comprising:

sensing an upstream temperature and a downstream temperature in the air duct at respective upstream and downstream positions relative to said at least one electric heating element such that said upstream and downstream temperatures are effected by radiant heat directly developed by said at least one heating element;

determining an air velocity through said air duct based upon said upstream and downstream temperatures;

determining an amount kilowatts (KW) or other heat per unit time or power based upon said velocity and said upstream temperature;

enabling said power control switch to supply said electrical power based upon said kilowatts (KW) or other heat per unit time or power.

45.   (original) A method of controlling a forced-air heater system as claimed in claim 44 including re-determining said air velocity with said kilowatts (KW) or other heat per unit time or power and said upstream and downstream temperatures when a comparison of said downstream temperature and said set point temperature is beyond a predetermined range.

46.   (original) A method of controlling a forced-air heater system as claimed in claim 44 including:

8

enabling said power control switch to supply said electrical power to said at least one heating element with a known power ON signal at least during one of a start up time and a time when said velocity, as determined by said determining air velocity, is less than a nominal value; and

re-determining said air velocity based upon said kilowatts (KW) or other heat per unit time or power of said nominal power ON signal and said upstream and downstream temperatures.

47.   (original) A method of controlling a forced-air heater system having at least one heating element disposed within an air duct carrying forced air from an upstream position to a downstream position, said at least one electric heating element supplied with electrical power via a power control switch, said air duct having a predetermined set point temperature, the method comprising:

sensing an upstream temperature and a downstream temperature in the air duct at respective upstream and downstream positions relative to said at least one electric heating element such that said upstream and downstream temperatures are effected by radiant heat directly developed by said at least one heating element;

determining an air velocity through said air duct;

determining an amount kilowatts (KW) or other heat per unit time or power based upon said velocity and said upstream temperature;

enabling said power control switch to supply said electrical power based upon said kilowatts (KW) or other heat per unit time or power; and

re-determining said air velocity with said kilowatts (KW) or other heat per unit time or power and said upstream and downstream temperatures when a comparison of said downstream temperature and said set point temperature is beyond a predetermined range.

48.   (original) A method of controlling a forced-air heater system as claimed in claim 47 including:

enabling said power control switch to supply said electrical power to said at least one heating element with a known power ON signal at least during one of a start up time and a time when said velocity, as determined by said determining air velocity, is less than a nominal value; and

re-determining said air velocity based upon said kilowatts (KW) or other heat per unit time or power of said known power ON signal and said upstream and downstream temperatures.

49.   (original) A method of controlling a forced-air heater system having at least one heating element disposed within an air duct carrying forced air from an upstream position to a downstream position, said at least one electric heating element supplied with electrical power via a power control switch, said air duct having a predetermined set point temperature, the method comprising:

sensing an upstream temperature and a downstream temperature in the air duct at respective upstream and downstream positions relative to said at least one electric heating element;

determining an air velocity through said air duct with said upstream and downstream temperatures;

determining an amount kilowatts (KW) or other heat per unit time or power based upon said velocity and said upstream temperature;

enabling said power control switch to supply said electrical power based upon said kilowatts (KW) or other heat per unit time or power.

50.   (original) A method of controlling a forced-air heater system having at least one heating element disposed within an air duct carrying forced air from an upstream position to a

downstream position, said at least one electric heating element supplied with electrical power via a power control switch, said air duct having a predetermined set point temperature, the method comprising:

sensing an upstream temperature and a downstream temperature in the air duct at respective upstream and downstream positions relative to said at least one electric heating element such that said upstream and downstream temperatures are effected by radiant heat directly developed by said at least one heating element;

determining an air velocity through said air duct;

determining an amount kilowatts (KW) or other heat per unit time or power based upon said velocity and one of said upstream temperature, said downstream temperature and said set point temperature;

enabling said power control switch to supply said electrical power based upon said kilowatts (KW) or other heat per unit time or power; and

re-determining said air velocity with said kilowatts (KW) or other heat per unit time or power and said upstream and downstream temperatures upon occurrence of a trigger point control.

51.   (original) A method of controlling a forced-air heater system as claimed in claim 50 wherein said trigger pont control is one of a time out function and a temperature differential function.

52.   (original) A method of controlling a forced-air heater system as claimed in claim 51 wherein said temperature differential function is based up one of said upstream temperature, said downstream temperature and said set point temperature compared to an acquired signal.

53.   (original) A method of controlling a forced-air heater system as claimed in claim 52 wherein said acquired signal one or the other of said sensed upstream temperature and downstream temperature which creates said differential function.

54.   (original) A method of controlling a forced-air heater system as claimed in claim 50 including:

enabling said power control switch to supply said electrical power to said at least one heating element with a known power ON signal at least during one of a start up time and a time when said velocity, as determined by said determining air velocity, is less than a nominal value; and

re-determining said air velocity based upon said kilowatts (KW) or other heat per unit time or power of said known power ON signal and said upstream and downstream temperatures.